2020 Annual Cyber Security Awareness Training
Applicability

• All WAPA Federal and Contract employees are required to complete annual Cyber Security Awareness Training (CSAT).

• North American Electric Reliability Corporation (NERC) Critical Infrastructure Protection (CIP) security awareness training (CIPSAT) is also required, and is included in a separate module (starting on slide 50).
Training Goals

• Provide training on the use of WAPA information and computing resources in a protective, efficient, ethical, and lawful manner.

• Ensure that all WAPA employees (Federal and Contractor) agree to the Rules of Behavior regarding use of WAPA equipment, accounts, and information only for authorized purposes.

• Test employees understanding of the material with a multiple choice test.
Contents: Cyber Security Awareness Training (CSAT)

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applicability</td>
<td>2</td>
</tr>
<tr>
<td>General computer and information use</td>
<td>6</td>
</tr>
<tr>
<td>Responsibility and Accountability</td>
<td>9</td>
</tr>
<tr>
<td>Using a WAPA Computer – Limited Personal Use</td>
<td>10-11</td>
</tr>
<tr>
<td>Telework and Travel - Employee Access and Protection</td>
<td>13-14</td>
</tr>
<tr>
<td>Password Management</td>
<td>15</td>
</tr>
<tr>
<td>Using Email</td>
<td>16</td>
</tr>
<tr>
<td>Local Administrator Accounts</td>
<td>17</td>
</tr>
<tr>
<td>Portable and Removable Media</td>
<td>18-23</td>
</tr>
<tr>
<td>Cell Phone and Camera Security</td>
<td>24-25</td>
</tr>
<tr>
<td>Protecting sensitive information and PII &amp; new requirements</td>
<td>26-31</td>
</tr>
<tr>
<td>Social Engineering and Phishing</td>
<td>32-42</td>
</tr>
<tr>
<td>Identity Theft</td>
<td>43-44</td>
</tr>
<tr>
<td>Malware</td>
<td>45</td>
</tr>
<tr>
<td>Rules of Behavior and Acceptable Use Policy</td>
<td>46-48</td>
</tr>
<tr>
<td>Further Reading</td>
<td>49</td>
</tr>
</tbody>
</table>
## Contents: CIP Security Awareness Training (CIPSAT)

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>NERC Critical Infrastructure Protection training introduction</td>
<td>50-55</td>
</tr>
<tr>
<td>Key Terms</td>
<td>56-57</td>
</tr>
<tr>
<td>Cyber Security Policies</td>
<td>58</td>
</tr>
<tr>
<td>Physical Access Controls</td>
<td>59-61</td>
</tr>
<tr>
<td>Electronic Access Controls</td>
<td>62</td>
</tr>
<tr>
<td>Visitor Control Program</td>
<td>63-64</td>
</tr>
<tr>
<td>Handling of BES Information and Its Storage</td>
<td>65-66</td>
</tr>
<tr>
<td>Incident identification and notification</td>
<td>67</td>
</tr>
<tr>
<td>Recovery Plans</td>
<td>68</td>
</tr>
<tr>
<td>Response to Cyber Security Incidents</td>
<td>69</td>
</tr>
<tr>
<td>Risks associated with interconnectivity</td>
<td>70-71</td>
</tr>
<tr>
<td>Information Protection and BCSI</td>
<td>72-74</td>
</tr>
<tr>
<td>Change Control and Configuration Management</td>
<td>75-76</td>
</tr>
<tr>
<td>Transient Cyber Assets and Removable Media</td>
<td>77-78</td>
</tr>
<tr>
<td>OSEM Points of Contact</td>
<td>79</td>
</tr>
<tr>
<td>Additional Training</td>
<td>80</td>
</tr>
<tr>
<td>Cyber Security Points of Contact</td>
<td>81</td>
</tr>
<tr>
<td>Addendum: Resources and Links</td>
<td>82</td>
</tr>
</tbody>
</table>
General Computer and Information Use
Some Definitions to note

- Cyber Security is concerned with protecting the confidentiality, integrity, and availability (CIA) of both information and information systems.

- Computing resources are any computer, programmable device, media, mobile device, server or network that is provided or supported by WAPA including Bulk Electric System (BES) Cyber Assets as defined by NERC.

- Technology can come in many forms, including information technology (IT), operational technology (OT), and Industrial Control System (ICS) technology. Operation technology is defined as hardware or software that detects or causes a change through the direct monitoring and/or control of physical devices, processes and events in the enterprise.

- WAPA information is:
  - Programs and/or data stored on any storage media that is owned, leased, or maintained by WAPA.
  - Any WAPA information or data that has not been publically released and is stored or in transit on any device or electronic communication system (e.g., email).
Why Cyber Security?

Loss of information or control of an information system could severely impact:

- WAPA operations
- The safety and security of WAPA employees
- Our customers
- The public
- National Security
Responsibility and Accountability

All employees and contractors are responsible for protecting WAPA information and systems from unauthorized access or modification.
Using a WAPA Computer

Using WAPA computers and information is one privilege of employment that comes with certain responsibilities:

• Use only approved and procured software and hardware to keep your system up to date and secure. Request and obtain approval for any non-standard software or hardware. Follow the WAPA process for Technology Acquisition Justification (TAJ) located at: http://teams.wapa.int/westernwide/it/wtis/TechnologyAcquisitionJustificationForm/Forms/AllItems.aspx

• Once the software or hardware has been properly assessed and approved by a supervisor, IT, and cyber security, follow the WAPA approved acquisition processes.

• Limited personal use of IT resources is allowed, but only as described in DOE Order 203.1

• There is no expectation of privacy; all WAPA systems are monitored.
Using a WAPA Computer (cont.)

- Activate your screen lock when leaving your computer.
- Take your badge and other security tokens with you whenever you leave your work station.
- Secure any sensitive documents or media.
- Shut down your computer at the end of your day, unless instructed otherwise (to allow over night updates).
- Store securely any login and password information.
- Report a lost badge immediately.
- Do not use your computer for illegal or inappropriate activity.
Misuse of WAPA Computers

Employees will not use WAPA computing resources to:

• View or download pornography
• Gamble on the internet
• Conduct private business/money-making ventures
• Load personal/unauthorized software or programs
• Make unauthorized configuration changes
• Play games during work time that is not during “fair use” or personal time
Telework and Travel: approved connectivity and peripheral equipment

- Only WAPA/Government Furnished Equipment (GFE) is allowed to connect to WAPA internal wired and wireless business networks.
- Only WAPA/ Government Furnished Equipment (GFE) is allowed to connect to any WAPA-owned peripheral equipment (e.g. projectors, video teleconference units, printers, etc.).
- While on travel or attending training, internet connections from WAPA-owned equipment shall only be established by using a WAPA-owned Broadband, MiFi, or mobile phone personal hotspot.
- Connections from personal devices to Office 365 services is approved.
- For teleworkers, use of your home router Ethernet (wired) or WiFi (wireless) network to connect to the WAPA VPN service is approved.
- For teleworkers, connecting personal equipment such as home printers to WAPA/Government Furnished Equipment (GFE) is not approved.
- To protect against the potential of unexpected disconnects that would leave WAPA GFE unprotected, WAPA VPN connections should not be left unattended for an extended period of time. At the end of your work session, WAPA VPN should be disconnected and GFE shutdown or disconnected from home router Ethernet (wired) or WiFi (wireless) network.
- Visitors and vendors are still authorized to connect to WAPA’s guest wireless network.
- Visitors and vendors presenting files or briefs on the internal network should email all files to their sponsor and present on WAPA/Government-owned equipment. These files will be scanned for vulnerabilities by WAPA security tools.
Employee Access and Protection

• Access to WAPA information systems is based on identification, authentication, and access authorizations.

• This means that your username and password, or your badge and PIN, will allow access to files and programs you are authorized to use.

• Authorization can be role based or entitlement based. Roles and entitlements are assigned by the employee supervisor to match the responsibilities the individual will be assigned.

• Never share your badge PIN or your password with anyone, not even your supervisor or IT personnel.
Password Management

Passwords should contain:

• 15 characters at a minimum, when supported by the system
• At least one special character
• At least one uppercase letter
• At least one lowercase letter
• At least one number

• Do not use personal information, common phrases or entire dictionary words in your passwords
• Secure your password reminders and password reset questions. Do not re-use. Make them unique!
• Change passwords regularly
• Never re-use passwords on different systems, such as using the same passwords at your home and at work
• Never share your password
• Securely store passwords and security questions/reminders physically or by encrypted methods such as password management software
• Use 2 factor authentication (2FA) whenever possible - such as a combination of password and pin or password and token generated by an authenticator application.
Email at WAPA

- Follow WAPA’s terms of use for email in the Rules of Behavior.
- Do not use email to sell anything.
- Do not send chain letters, jokes, offensive letters, mass email, unnecessary pictures.
- Use care when using “reply all” to prevent sending unnecessary email traffic or messages to those without a need to know.
- Avoid personal use of WAPA’s email system or your WAPA email account.
- Never reuse personal passwords for your WAPA email password.
- Delete email from unknown senders.
- Consider configuring Outlook to use Text Only instead of HTML.
- If you suspect an email is spam, forward it to spam@wapa.gov to allow further research by cyber security.
Local Administrator Accounts and Privileged user accounts

• Local administrator accounts are sometimes allowed if justified by business requirements. Local Administrator Accounts:
  • Must be approved in writing by a supervisor and cyber security.
  • Require additional training – users with administrator accounts must complete additional role based training for privileged users. Contact WITCC to request the PrivUser training.
  • Must be removed when no longer required.
  • Should not be overused - Approved software and updates should be installed by your IT/support staff or other approved users whenever technically feasible.

• If you have a local administrator account:
  • Never log in routinely with an administrator or local administrator account.
  • Do not browse the internet using an administrator or local administrator account.
  • Only use the local administrator account for approved business functions.
Portable and Removable Media
What is Portable and Removable Media?

WAPA allows and supplies employees portable and removable media for official use, such as laptop computers, tablets, mobile phones, CD/DVDs, and thumb drives, with the appropriate review and approval from supervisors and cyber security.

Portable media pose a number of additional cyber risks including loss, theft and vulnerabilities from malware or other misuse, requiring additional security controls for protection.
Examples of Portable and Removable Media

Removable media include:

- Thumb drives, flash drives, sim cards
- CDs and DVDs
- External hard drives
- Music players

Mobile computing devices include:

- Cell phones and smartphones
- Laptops
- Tablets
- Wireless e-readers (such as Kindle and iPad)
- Other portable electronic devices (PEDs)

NOTE – NERC CIP terminology also refers to these as **transient devices**
Using and Protecting Portable and Removable Media

• Do not use removable media that has not been approved by WAPA. (contact your cyber security officer or supervisor regarding the approval process)

• When traveling with a WAPA laptop: make sure that it has full disk encryption installed and has the most recent security updates; do not leave unattended; connect via VPN from outside WAPA.

• Keep personal and work media separate – never connect personal media at work or vice versa

• Never connect an unknown drive – such as those found in the parking lot or received from a vendor at a conference

• Do not charge personal devices through your WAPA computer; use an outlet or power strip

• Verify any unknown, non-WAPA device or media with cyber security before use

• Do not attach removable media from a low security system to a medium or high security system (and vice versa).
Using and Protecting Portable and Removable Media (cont.)

• Store portable and removable media according to the appropriate security classification in WAPA-approved storage containers or areas

• Label all removable media with appropriate category. Examples are:
  • BES Cyber System Information (BCSI) – Controlled Distribution – Official Use Only (for BCSI under Exemption 7E & 7F);
  • Official Use Only – Authorization Required Before Distribution (for non-BCSI security information under Exemption 7E & 7F);
  • Official Use Only (for Exemption 3) or;
  • PII – Official Use Only (for Exemption 2)
    Follow WAPA’s policy for sanitizing, purging, discarding, and destroying removable media

• Destroy classified removable media in accordance with its classification level

• Never insert removable media with unknown content into your computer. Have cyber security run a scan on it.
Using and Protecting Portable and Removable Media (cont.)

• All WAPA employees must immediately report any lost or stolen WAPA devices or personal devices that contain WAPA information. Report to one or more of the following: WAPA IT Call Center, Cyber Security, Office of Security and Emergency Management, Property (Inventory Management), and your supervisor.

• Sensitive information must never be stored on portable media unless approved in writing by a manager and must be encrypted.

• WAPA reserves the right to erase any WAPA device or device that has WAPA information on it, even a personal cell phone.
Cell Phone Security

For both personally owned and work (WAPA owned) phones:

• Secure your phone physically.
• Secure your phone with a PIN.
• Never store WAPA documents or photograph WAPA information on your personal phone.
• Report a lost or stolen work phone immediately to WITCC or Cyber Security.
• Never charge or tether your personal phone by connecting to any WAPA system. Charge your phone by connecting directly to a power source such as a power strip or electric outlet.
• Never charge or tether your WAPA phone by connecting to any Non-WAPA system.
• Please consult with your Cyber Security representative to obtain guidance regarding installation of operating system updates (iOS, Android, etc.) on a WAPA–owned phone when adequate Wi-Fi or Internet access is not available to perform the update.
Camera Security

- Cameras should always be approved based on a business requirement.
- Cameras for business use should be procured via WAPA approved processes.
- Never connect personal cameras to WAPA equipment.
- Never connect WAPA owned cameras to Personal equipment.
- Digital photos taken for WAPA business requirements should never be stored on personal devices or private cloud services.
- Consult with your Cyber Security representative to obtain guidance regarding the approval and use of cameras at WAPA.
Protecting Sensitive Information
What is Sensitive Information?

Sensitive information must be protected from unauthorized disclosure.

Sensitive information includes:

- Personally Identifiable Information (PII)
- Official Use Only (OUO)
- Information related to BES Cyber Assets & Systems, such as BES Cyber System Information (BCSI) (covered in the CIPSAT training module)

Refer to WAPA Policy 471.1 on Identifying and Protecting Official Use Only Information

Refer to WAPA Order 471.3 Information Control Order

No sensitive information can be stored on portable or mobile devices and media without management approval and must be encrypted. Contact your cyber security officer for more information.)
What is PII?

Personally Identifiable Information, or PII, is information about an individual maintained by an agency which can be used to distinguish or trace an individual’s identity including but not limited to:

- Name (when combined with other identifying information)
- Social security number
- Date and place of birth
- Mother’s maiden name
- Biometric records
- Education
- Financial transactions
- Medical history
- Criminal or employment history
Privacy Requirements

Certain information, such as classified information, sensitive PII (e.g. Social Security Numbers and financial information including credit card numbers), and Controlled Unclassified Information or CUI, should never be sent to or from personal (non WAPA) email.

Department Records should not be stored on non-official electronic storage media (e.g. personal devices, portable hard drives, or memory sticks) or non-official information services such as unauthorized cloud services or other file storage.

Agency requirements for privacy: (per OMB Circular A-130)
• Establish rules of behavior, including consequences for violating rules of behavior, for employees and contractors that have access to Federal information or information systems, including those that create, collect, use, process, store, maintain, disseminate, disclose, or dispose of PII; and
• Ensure that employees and contractors have read and agreed to abide by the rules of behavior for the Federal information and information systems for which they require access prior to being granted access.

Users who routinely handle PII must agree to Privacy Rules of Behavior, including:
1. Limit the creation, collection, use, processing, storage, maintenance, dissemination and disclosure of PII to that which is legally authorized, relevant and reasonably deemed necessary for the proper performance of agency functions.
Handling and protecting PII and other sensitive information

• Personally Identifiable Information (PII) that is stored (data at rest) or sent (data in transit) electronically must always be encrypted when technically feasible.

• Remote access to PII requires Multi Factor Authentication (MFA) such as a password AND a physical token such as a Personal Identity Verification (PIV) badge (per HSPD-12), not just a password.

• Any email with PII must be encrypted using Entrust.

• Practice situational awareness and operational security (OPSEC). If you see something, say something – such as sensitive information physically out in the open, sensitive logical information that is improperly classified/stored/transmitted, an unrecognized person in the area, something unusual on your computer, or any other situations potentially impacting the privacy and security of WAPA information.
Protection OUO (continued)

• Information marked as Official Use Only (OUO) is unclassified information that could be used to negatively impact WAPA’s mission, if not protected.

• Users must never place OUO information on any non-WAPA personal devices.

• OUO data must be encrypted when stored on portable media (“data at rest”) or electronically transmitted (“data in transit”) such as through email.

• Entrust is WAPA’s standard encryption software. Contact WITCC to obtain an Entrust account and the Entrust software.

• WAPA cyber security provides support for other approved secure methods to share information with non WAPA entities. Contact the cyber security team for more information.
Social Engineering and Other Cyber Threats
Social Engineering

Social engineering uses various methods of contact and trust building in order to elicit an action or divulging of information that can be used for malicious purposes such as entry to a building or intelligence gathering and cyber-attacks.

Social engineering takes many forms and methods:

• Phone calls from unavailable numbers, or posing as a known vendor or trusted party, who ask about your name, position, contact information, organization, co-worker information, or projects you are involved with in order to obtain more information about you and WAPA for misuse.

• Phishing emails that are crafted in such a way to entice you into clicking on malicious links or providing more information

• Social Networks (Facebook, Twitter, LinkedIn for example) and other online forums and email lists that may open you up to contacts looking to “friend” “follow” or “link” with you for the purpose of building trust that can later be misused, such as using your contact information for messaging, phone calls, and emails mentioned above.
Thwart Social Engineering

• Always verify an unknown caller’s identity and contact information before giving out any information. Take charge of the conversation and say you will call back. Limit the information provided

• Alert cyber security of suspicious attempts to obtain information

• Do not participate in telephone surveys

• Do not give out personal information

• Do not give out computer or network information

• Do not follow any instructions from unverified personnel

• Document the interaction: Verify the identity of the individuals, write down their phone number, take detailed notes

• Contact Security and/or WAPA IT Call Center (WITCC)
Thwart Social Engineering (cont.)

• Report any contact by foreign nationals
• Treat new connection requests with caution on social networks such as LinkedIn, Twitter, Facebook, online bulletin boards, email lists
• View email in plain text if possible
• Scan all attachments
• Delete emails from senders you do not know
• Don’t forward infected or suspicious email or files to anyone but cyber security and spam@wapa.gov in order that they may be researched properly
• Refrain from accessing website links in email or popups
What is Phishing?

Phishing attacks use email, pop-ups, or malicious websites to solicit personal information by posing as a trustworthy organization. For example, an attacker may send email seemingly from a reputable credit card company or financial institution that requests account information, often suggesting that there is a problem or that urgent action is needed. When users respond with the requested information, attackers can use it to gain access to the accounts.
What is Phishing (cont.)

Phishing attacks may appear to come from other types of organizations, such as charities. Attackers often take advantage of emotional responses generated by current events, money concerns, or certain times of the year, for example:

- natural disasters (e.g. fires, floods, hurricanes, tsunamis)
- epidemics and health scares (e.g. pandemic flu or virus)
- economic concerns (e.g. IRS scams, social security)
- major political elections
- Holidays
- Money winnings
- Job related benefits such as pay retirement information, pay increases or bonuses
- Anything that can elicit an emotional response
Help Thwart Phishing Attacks

1. Limit your exposure
   - Refrain from signing up for third-party email lists, or use a separate personal email address when feasible.

2. Treat all email with caution
   - Be suspicious of email that is unsolicited, seeks an urgent or emotional response, is poorly worded, or contains links to internet sites that you do not recognize
   - If you think the email is safe, consider manually going the website instead of clicking on a link in the email.
   - Consider configuring your Outlook to open all messages as text only

3. Contact the sender’s organization using a known phone number independent of what was provided to confirm the message’s validity.

4. Never give out organizational, personal, or financial information to anyone by email.

5. View email in plain text (instead of HTML) if possible.
What is Spear Phishing?

Spear phishing is a more sophisticated phishing attack that appears to come from inside your organization or trusted source.

Spear phishing targets particular individuals, groups of people, or organizations.

To protect against spear phishing:

• Be wary of suspicious emails that use your name and/or appear to come from inside your organization or a related organization that seem out of character with normal communication.

• Call the sender to confirm the message’s validity

• Forward any suspected spear phishing email to cyber security and then delete it.
What is Whaling?

Whaling is a type of phishing attack that targets senior-level or high-risk personnel. Whaling:

- Uses personalized information: Name, title, official email address, sender names from personal contact lists
- Is an individualized, believable message
- Exploits relevant issues or topics

To protect against whaling:

- Be wary of emails that ask for sensitive information, contain unexpected attachments, or provide unconfirmed URL’s or links
- Call the sender to confirm the message’s validity
- Forward the whaling email to the WAPA IT Call Center (WITCC) or Cyber Security and then delete it
What are Internet Hoaxes?

Hoaxes, often seen in chain letters, come in two types:

1. Attempts to trick or defraud by instructing users to delete a file necessary to the operating system or convincing users to send money or personal information
2. Urban legends that warn users of a threat or claim to be notifying them of important or urgent information

- Hoaxes clog networks and slow down internet and email services, and sometimes be part of a distributed denial of service attack

To protect against internet hoaxes:

- Do not click on any links in a suspected hoax message
- Report suspicious messages or content immediately to Cyber Security and/or WAPA IT Call Center
- Don’t forward suspected email hoaxes to co-workers
- Do not download any files related to a suspected internet hoax
- Internet searches on sites like snopes.com can be used to identify hoaxes.
Dealing with suspicious email:

If you receive any suspicious email (including suspected spam/phishing), immediately forward the email to both witcc@wapa.gov and to spam@wapa.gov (and cyber security personnel if requested)

Then delete the suspicious email. Do not click on any links contained in the email. Do not forward to other employees except as mentioned above.

The Network Security Operations Center (NSOC) analyzes all email sent to the spam folder.
Protect against Identity Theft

Social Engineering can result not only in the disclosure of sensitive government information, but also in identity theft.

To protect your identity:

• Ask how information will be used before giving it out
• Pay attention to credit card and bank statements
• Avoid common names/dates for passwords and PINs
• Pick up postal mail promptly
• Shred personal documents
• Refrain from carrying your Social Security Card or Passport
• Request your credit report and review at least annually
If you are a victim of identity theft

• Contact credit reporting agencies
• Contact financial institutions to cancel accounts
• Monitor credit card and bank statements for unauthorized purchases
• Report the crime to local law enforcement
• Consider a credit freeze

Learn more about Identity Theft:

If you suspect your computer is infected with malware

1. Disconnect the equipment from the Network/Internet.
2. Leave the equipment on; do not close or open new programs.
3. Write down any messages that appear on the monitor.
4. Note all events that occurred before and during the expected attack. (Did it come from an email link, email attachment, USB, web site, etc.?)
5. Report the incident immediately. Contact the WAPA IT Call Center (720-962-7111), your Cyber Security Officer*, or your IT Manager. (*refer to the contacts list at the very end of this training)
Rules of Behavior
Rules of Behavior (ROB) – Acceptable Use Policies

The Rules of Behavior – Acceptable Use Policies outlines acceptable use by employees of the computer systems owned, provided, controlled or supported by WAPA, including servers and networks, computers and portable and storage devices and equipment.

You must read WAPA’s Rules of Behavior:

As part of the course test, you will be required to acknowledge that you have read and understand the Rules of Behavior and accepted your responsibilities as a WAPA employee or contractor.

A link to the Rules of Behavior will be provided at the end of this training module.
Rules of Behavior (cont.)

Noncompliance with the Rules of Behavior will constitute a security violation and will be reported to the management of the user and the Cyber Security Officer, and can result in short-term or permanent loss of access to computing systems. Serious violations may result in disciplinary action, and/or civil or criminal prosecution.
Further Reading

- DOE O 203.1, Limited Personal Use of Government Office Equipment including Information Technology
  https://www.directives.doe.gov/directives-documents/200-series/0203.1-BOrder

- WAPA Rules of Behavior – Acceptable Use Policies:

- WAPA P 205.2F Cyber Security and Security Management
- WAPA Policy 200.3 Protecting Electronic Personally Identifiable Information
- WAPA Order 471.3 Information Control Order

Refer to the links at the end of the training for WAPA policies.
2020 NERC Critical Infrastructure Protection Training
Applicability

• All WAPA Federal and Contract employees are required to complete annual North American Electric Reliability Corporation (NERC) Critical Infrastructure Protection (CIP) training

• Cyber Security Awareness Training is also required, and is included in a separate module that is part of this training (slides 1-49).
NERC CIP training requirements

• Employees and contractors must take WAPA’s annual Cyber Security Awareness Training (CSAT) and CIP Security Awareness Training (CIPSAT) which is comprised of these slides.

• WAPA will also provide, at least once each calendar quarter, awareness training that reinforces cyber security practices for the WAPA personnel who have authorized electronic/logical or authorized unescorted physical access to BES Cyber Systems. This quarterly awareness training may consist of WAPA articles, emails, posters, and presentations.
NERC CIP training requirements (cont.)

Included in this CIP Security Awareness Training are the following topics:

1. Cyber security policies
2. Physical access controls
3. Electronic access controls
4. The visitor control program
5. Handling of BES Cyber System Information and its storage
6. Identification of a Cyber Security Incident and initial notifications in accordance with the entity’s incident response plan
7. Recovery plans for BES Cyber Systems
8. Response to Cyber Security Incidents
9. Cyber security risks associated with a BES Cyber System’s electronic interconnectivity and interoperability with other Cyber Assets, including Transient Cyber Assets, and with Removable Media.
NERC CIP training requirements (cont.)

Completion of this Cyber Security Awareness Training (CSAT) and CIP Security Awareness Training (CIPSAT) is required prior to granting authorized electronic/logical access and authorized unescorted physical access to applicable Cyber Assets, except during CIP Exceptional Circumstances.

This training is also required for informational access, unless handling requirements are covered by other legal means (such as a non-disclosure agreement).
Additional training goals

Ensure employees:

• Understand physical and electronic/logical access controls to prevent NERC violations and protect BES Cyber Assets

• Properly handle and control information

• Develop awareness of the “rules of behavior” unique to accessing, operating, changing, and maintaining BES Cyber Assets
Key terms

The following terms may be referenced in this training, and are important to understand for general CIP Security Awareness.

• **Bulk Electric System (BES):** As defined by the Regional Reliability Organization, the electrical generation resources, transmission lines, interconnections with neighboring systems, and associated equipment, generally operated at voltages of 100 kV or higher. Radial transmission facilities serving only load with one transmission source are generally not included in this definition.

• **BES Cyber System:** One or more BES Cyber Assets logically grouped by a responsible entity to perform one or more reliability tasks for a functional entity.

• **BES Cyber Assets:** A Cyber Asset that if rendered unavailable, degraded, or misused would, within 15 minutes of its required operation, mis-operation, or non-operation, adversely impact one or more Facilities, systems, or equipment, which, if destroyed, degraded, or otherwise rendered unavailable when needed, would affect the reliable operation of the Bulk Electric System. Redundancy of affected Facilities, systems, and equipment shall not be considered when determining adverse impact. Each BES Cyber Asset is included in one or more BES Cyber Systems

More information and additional terms may be referenced on the NERC web site. A link is provided in the Addendum: Resources and Links, located at the end of this training.
Key terms (cont.)

- **Critical Assets**: Facilities, systems, and equipment which, if destroyed, degraded, or otherwise rendered unavailable, would affect the reliability or operability of the Bulk Electric System.

- **Cyber Assets**: Programmable electronic devices and communication networks including hardware, software, and data.

- **Transient Cyber Assets**: A Cyber Asset that (i) is capable of transmitting or transferring executable code, (ii) is not included in a BES Cyber System, (iii) is not a Protected Cyber Asset (PCA), and (iv) is directly connected (e.g., using Ethernet, serial, Universal Serial Bus, or wireless, including near field or Bluetooth communication) for 30 consecutive calendar days or less to a BES Cyber Asset, a network within an ESP containing high or medium impact BES cyber systems, or a PCA. Examples include, but are not limited to, Cyber Assets used for data transfer, vulnerability assessment, maintenance, or troubleshooting purposes.

- **Protected Cyber Asset** (PCA)

- **Physical Access Control System** (PACS)

- **Electronic Access Control and Monitoring** (EACM)
CIP Security Awareness Training Content:

1) Cyber security policies
Federal and contract employees with authorized logical access and/or authorized unescorted physical access to a BES Facility or BES Cyber Asset must be familiar with:

- [WAPA Rules of Behavior](#)
- WAPA Policy 205.2F Cyber Security and Security Management
- WAPA Order 470.1I Safeguards and Security Program
- WAPA Order 471.3 Information Control

Refer to additional Resources and Links in the addendum at the end of this training.
2) Physical access controls

Physical CIP Access:

1. All BES Cyber Systems are contained within a Physical Security Perimeter (PSP).
2. Only personnel with current authorization may enter the PSP without an escort. Never loan/share your badge or key with another individual. Report a lost or stolen badge or key immediately.
3. Tailgating (following, or allowing someone to follow) is prohibited, as NERC CIP requires that each individual be logged when passing through a PSP.
4. Authorized physical access to a PSP is controlled and monitored by means of an electronic Physical Access Control System (PACS). The PAC will grant access at medium impact facilities using a badge only. Access at a high impact facility will require both a badge and PIN.
5. The PACS or a lock will grant access at low impact facilities. (refer to next slide)
Physical access controls (cont.)

Physical Security is afforded to all WAPA Low Impact BES Cyber Systems and physical access is based on need. At a minimum, the physical security afforded shall include at least one of the following, as deemed most appropriate by WAPA:

- The BES Cyber System is located within a locked building when not attended.
- The BES Cyber System is located within a building with entrances which are alarmed through a PACS system.
- The BES Cyber System is located within a building with entrances which are alarmed through a SCADA system.
- The BES Cyber System is located within a locked cabinet.
Physical access controls (cont.)

Physical CIP Access – Any Facility:

- In the event of a badge failure the individual requiring access must contact the Security Operations Center (SOC) with their name and assigned PACS PIN. The on duty Officer will confirm access is authorized in the PACS, and verify the name/PACS PIN combination is correct before granting access remotely over the PACS. Personnel shall contact the on duty Officer when departing.

- In the event of a PACS system failure, a mechanical key-override process is instituted. Individuals requiring access to an override key must contact the SOC and verify identity by stating name and PIN. The on duty Officer confirms access is authorized in the PACS, and verifies that the name/PIN combination is correct before disclosing the key box combination.

- For additional information, contact your regional OSEM representative, referred to on a later slide.
3) Electronic/Logical access controls

Electronic CIP Access:
- NERC CIP Standards require that all logical access be logged when passing through a “Electronic Security Perimeter” when using a user ID and password
- Logical (electronic) access records must be kept at least 90 days.
- Logs must be kept longer if related to a reportable incident.

Unless exempted in writing:
- DO NOT connect an outside digital device (transient cyber asset or removable media) to any asset within the electronic security perimeter. This includes devices such as: USB/thumb drives, CD/DVD, mobile phones, and laptops. Approval for use of these devices must be obtained in writing by the responsible manager, and should be assessed for risk by Cyber Security.
- DO NOT download software of any type or add or remove assets unless approved via the CIP Change Management Process.
- DO NOT Use a BES Cyber Asset for personal use. These assets are for business mission use only.

Laptops may connect to the WAPA GSS network for updates to anti-virus, Operating System, Applications, or other approved changes and then connect to CIP Low, Medium and High impact sites.
4) The visitor control program

Visitor Controls - When escorting visitors within a CIP Physical Security Perimeter (PSP) it is your responsibility to:

• Understand that only those people with current authorization to enter the PSP can escort visitors or other unauthorized individuals into the PSP.
• Continually escort any individual who does not have authorized, unescorted access.
• Enter the area before the escorted person and leave the area after the escorted person.
• Maintain continuous line of sight or dedicated focus of the unauthorized person(s)
• Limit the visitors to no more than five per escort and keep in close proximity
• Conduct a proper handoff of escorting duties if you need to depart the area. This handoff must include:
  • Ensuring the new escort has authorized, unescorted privileges within the PSP
  • Briefing the escort on the visitors present, including names, orgs, purpose for entering the PSP, time entered, and how access into the PSP was logged
  • Verbal confirmation from the new escort that they understand they are assuming all escorting responsibilities and understand what those responsibilities entail
  • Notifying the visitors present of who is the new escort
4) The visitor control program (cont.)

Visitor Controls - When escorting visitors it is your responsibility to:

• Know the logging procedures your Region uses and log all visitors into a PSP

• Visitors must either sign the associated CIP area visitor log or call the associated SOC who records visitor information on a Daily Activity Report (DAR).
  • Recorded visitor information includes date and time of the initial entry and last exit, visitor name, and name of responsible host.
  • It is the responsibility of the escort to ensure that visitors complete all fields listed in the visitor log or all visitor information is reported to the SOC.

• Ensure no visitor harms the integrity of the critical cyber assets, or interferes with the reliability of the Bulk Electric System.

NOTE: CIP area Visitor Logs and DARs are collected and reviewed quarterly.
CIP Security Awareness Training Content:

5) Handling of BES Cyber System Information (BCSI) and its storage

BCSI Protection:

Users are responsible for protecting BCSI from unauthorized access.

Users will not attempt to access any BCSI or programs contained on any system for which they do not have authorization or explicit consent of the owner of the system.

Before sharing BSCI, verify that those you share with have access authorization to that information.
CIP Security Awareness Training Content:

5) Handling of BES Cyber System Information (BCSI) and its storage (cont.)

Additional practices to follow to protect BCSI:

• Lock the workstation before you leave.
• Encrypt Official Use Only (OUO) and Personally Identifiable Information (PII) for electronic storage and/or transmission.
• Protect media from adverse environmental conditions, such as heat and magnetic fields that can cause damage.
• Handle and process Engineering information as per WAPA O 471.3 (Information Control Order)
• BES Cyber System Information contained on Transient Cyber Assets must be properly managed per WAPA policy and procedures. (Refer to the topics for Transient Cyber Assets, and Information Protection elsewhere in this training)
6) Identification of a Cyber Security Incident and initial notifications in accordance with the entity’s incident response plan

Be aware of how to identify incidents, as identified in the WAPA Cyber Security Incident Response Plan (CSIRP).

Report suspected cyber security incidents immediately to WITCC or your ISSO.

Incident identification and detection is described in WAPA’s Cyber Security Incident Response Plan (CSIRP):

“An incident is a violation or the threat of a violation of information security policies, acceptable use policies and/or other security policies. Examples of incidents include a Denial of Service (DoS) to a WAPA’s web page, download and installation of malware through email or a web page, WAPA data loss not released through approved agency methods, the disclosure or compromise of WAPA credentials into a web site not managed by WAPA, or an unplanned disruption or the attempt of disruption to the BES by unauthorized personnel through a cyber security control.”

Reference: WAPA Cyber Security Incident Response Plan (CSIRP).

Refer to the resources and links addendum supplied with this training.
7) Recovery Plans for BES Cyber Systems

- Become familiar with the Recovery Plan for the assets in your area.
- Know the roles you may be assigned for Recovery activity.
- Insure that Recovery Plans are exercised periodically, at least annually.
- Be familiar with any backup and restore procedures for assets in your area.
- Backup and recovery of assets must be tested periodically, as defined in their recovery plan.
- Identify any lessons learned that are determined from Recovery tests, exercises, or real recovery activities.
- Update recovery plans to reflect lessons learned from recovery tests, exercises, or actual recoveries.
- Notify those with roles in the recovery plan of the update to the plan.
CIP Security Awareness Training Content:

8) Response to Cyber Security Incidents

Reporting Incidents:
Employees will report all incidents or attempts of anyone trying to gain unauthorized access to BES Cyber Assets or other computer resources to the proper authorities by contacting the WAPA IT Call Center (720-962-7111), your Cyber Security Officer*, or your IT Manager.

Reference: WAPA Cyber Security Incident Response Plan (CSIRP). Refer to the Resources and Links Addendum supplied with this training.

*Refer to the Cyber Security Points of Contact addendum supplied with this training
9) Cyber security risks associated with a BES Cyber System’s electronic interconnectivity and interoperability with other Cyber Assets, including Transient Cyber Assets, and with Removable Media.

Know the risks associated with systems interconnectivity:
• Risks associated with exposing connections outside the boundary, leading to loss of confidentiality, integrity, and availability.

Know the risks associated with transient cyber assets and removable media:
• Risk from exposure to malware.
• Risks associated with loss or theft.
• Risks associated with unencrypted information, leading to loss of confidentiality.
• Risks associated with moving cyber assets such as removable media from a low security enclave to a higher security enclave (and vice versa).
CIP Security Awareness Training Content:

9) Cyber security risks associated with a BES Cyber System’s electronic interconnectivity and interoperability with other Cyber Assets, including Transient Cyber Assets, and with Removable Media. (cont.)

Any new BES Cyber System connections must be formally reviewed and approved by Cyber Security personnel and/or managers of those systems via the appropriate Change Control and Configuration Management Processes.

Changes to existing BES Cyber System connections must be formally reviewed and approved by Cyber Security personnel and/or managers of those systems via the appropriate Change Control and Configuration Management Processes.
Information Protection and BCSI

• Information Protection Officers (IPOs) will manage classification and categorization decisions for information – only these IPOs can designate information as BES Cyber System Information, or “BCSI”. The IPOs are members of the IT Cyber Security Information Assurance Group (refer to points of contact on slide 81) and the IT Cybersecurity Compliance Support Group.

• Physical protection of OUO, including BCSI, is required in unmanned facilities, such as substations.

• Follow best practices in your office – lock computer, file or put away paper.

• Encrypt BCSI and other OUO information whenever technically feasible, both data at rest (files) and data in transit (email).

• Mobile device require additional protection. A signed user agreement (currently under development) will be required for personal phones as well as work phones accessing WAPA information including email.

• Become familiar with best practices for media sanitization and destruction of disposed assets containing information as described in WAPA O 471.3.

• Consult with your Information Cyber Security Officer (ISSO) for additional information.

• Reference WAPA’s Information Control Order WAPA O 471.3 (Refer to the addendum at the end of this training for links to WAPA Orders).
BSCI updates
Approved locations and procedures

• Approved Systems designated for storing BCSI:
  • Maximo - Asset Management System
  • Engineering Design Drive – Access Controlled CIP File Storage
  • Cybersecurity Compliance Support SharePoint Site: https://compliance.wapa.int
  • ASPEN Relay Database

• To get access, your supervisor must request your entitlements to these sites using WAYS (where you can filter available roles using “CIP”)
BSCI updates
Approved locations and procedures (cont.)

• Example WAYS BCSI Related Access Entitlements:
  • CIP Aspen
  • CIP Maximo
  • CIP SharePoint <insert specific library names>
  • CIP Engineering Drawings <insert region>
• WAYS requires your supervisor to include a statement of your need for access with the request.
• Access authorization should be verified before sharing BCSI.
Change Control and Configuration Management

• Additions or Changes to BES Cyber Systems must go through the Configuration Change Management Process

• The Change Control Process includes cyber security testing and baseline management

• The Change Control Process will require that a baseline be performed on all assets. This will include all High (i.e. Control centers) and Medium (i.e. Substations) Impact Bulk Electric System (BES)

• Baseline elements required by Change Control Process are as follows:
  • Operating System or firmware of BES asset
  • Commercial or open source application software installed on BES asset
  • Custom software installed on BES asset
  • Logical network port accessible on BES asset
  • Security patches applied on BES asset
Change Control and Configuration Management (cont.)

- The Change Control and Configuration Management Process will utilize Service Now (WAYS) for its workflow and tracking.
- Prior to implementing any change in the production environment (additions, removals or changes), testing will need to be preformed and documentation of the results will be maintained through the Change Control and Confirmation Management process.
- Any changes that affect the baseline elements will need to be processed through Change Control. For a change that deviates from the existing baseline configuration, the baseline configuration will need to be updated within 30 calendar days of completing the change.
- Every High Impact BES asset’s baseline will be monitored at least once every 35 calendar days for changes.
Transient Cyber Assets

Per the NERC Glossary, a Transient Cyber Asset is defined as: A Cyber Asset that (i) is capable of transmitting or transferring executable code, (ii) is not included in a BES Cyber System, (iii) is not a Protected Cyber Asset (PCA), and (iv) is directly connected (e.g., using Ethernet, serial, Universal Serial Bus, or wireless, including near field or Bluetooth communication) for 30 consecutive calendar days or less to a BES Cyber Asset, a network within an ESP, or a PCA. Examples include, but are not limited to, Cyber Assets used for data transfer, vulnerability assessment, maintenance, or troubleshooting purposes.

In plain English terms, transient cyber assets includes such things as USB sticks, portable hard drives, CD/DVD media, or devices such as laptops and mobile phones. These devices have the capability to store and transfer files from one area to another, and thereby pose risks that must be mitigated.
Transient Cyber Assets (cont.)

Transient Cyber Assets (otherwise known as mobile devices/mobile media) pose a risk to the BES environment if not properly managed.

Be aware that transient cyber assets have requirements for:

• Device authorization
• Software authorization
• Security patch management
• Malware prevention
• Unauthorized use
• Contact your cyber security officer and your supervisor for more information on procedures and best practice.
# Office of Security and Emergency Management (OSEM) points of contact

<table>
<thead>
<tr>
<th>Location</th>
<th>Name</th>
<th>Phone</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>Director, Office of Security and Emergency Management</td>
<td>P. Bruce Watson</td>
<td>720-962-7290</td>
<td><a href="mailto:pwatson@wapa.gov">pwatson@wapa.gov</a></td>
</tr>
<tr>
<td>DSW Security Specialist</td>
<td>Joe Webb</td>
<td>602-605-2546</td>
<td><a href="mailto:webb@wapa.gov">webb@wapa.gov</a></td>
</tr>
<tr>
<td>RMR Security Specialist</td>
<td>Phil Kamps</td>
<td>970-461-7533</td>
<td><a href="mailto:kamps@wapa.gov">kamps@wapa.gov</a></td>
</tr>
<tr>
<td>SNR Security Specialist</td>
<td>Joe Grzeczka</td>
<td>916-353-4490</td>
<td><a href="mailto:grzeczka@wapa.gov">grzeczka@wapa.gov</a></td>
</tr>
<tr>
<td>UGP Security Specialist</td>
<td>Cory Whittle</td>
<td>605-882-7539</td>
<td><a href="mailto:whittle@wapa.gov">whittle@wapa.gov</a></td>
</tr>
<tr>
<td>Compliance OSEM CIP004 and CIP006 SME</td>
<td>Joe Grzeczka</td>
<td>916-353-4490</td>
<td><a href="mailto:grzeczka@wapa.gov">grzeczka@wapa.gov</a></td>
</tr>
<tr>
<td>Compliance OSEM CIP004 R3 Identity confirmation and Personnel Risk Assessment (PRA) SME.</td>
<td>Alexis Gatsiopoulos</td>
<td>720-962-7118</td>
<td><a href="mailto:Gatsiopoulos@wapa.gov">Gatsiopoulos@wapa.gov</a></td>
</tr>
<tr>
<td>OSEM CIP014 Compliance SME</td>
<td>Jaime Kirchue</td>
<td>720-962-7311</td>
<td><a href="mailto:Kirchue@WAPA.GOV">Kirchue@WAPA.GOV</a></td>
</tr>
</tbody>
</table>
Additional Training

• In addition to the training contained in the annual Cyber Security Awareness Training (CSAT) and CIP Security Awareness Training (CIPSAT) contained in these training slides, additional training may be required based upon your position, role, job duties, and access to WAPA information, assets, or external (non-WAPA) facilities.

• Discuss with your supervisor any additional training that may be required for your position, job duties, and access.

• Training may be required for non-WAPA personnel who need to access WAPA facilities.
## Cyber Security and Information Protection Points of Contact

<table>
<thead>
<tr>
<th>Location</th>
<th>Name</th>
<th>Office Tel./On Call Phone</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>HQ, WLO</td>
<td>Kevin Schulz</td>
<td>720-962-7142</td>
<td><a href="mailto:kschulz@wapa.gov">kschulz@wapa.gov</a></td>
</tr>
<tr>
<td>HQ, WLO</td>
<td>David Hartley</td>
<td>720-962-7212</td>
<td><a href="mailto:dhartley@wapa.gov">dhartley@wapa.gov</a></td>
</tr>
<tr>
<td>HQ, WLO</td>
<td>Jerry Smith</td>
<td>720-962-7424</td>
<td><a href="mailto:jwsmith@wapa.gov">jwsmith@wapa.gov</a></td>
</tr>
<tr>
<td>DSW</td>
<td>Ronald Juliana</td>
<td>602-605-2517</td>
<td><a href="mailto:RJuliana@wapa.gov">RJuliana@wapa.gov</a></td>
</tr>
<tr>
<td>RMR, CRSP</td>
<td>Tiffany Applegate</td>
<td>970-461-7498</td>
<td><a href="mailto:applegate@wapa.gov">applegate@wapa.gov</a></td>
</tr>
<tr>
<td>SNR</td>
<td>Debra Boothe</td>
<td>916-353-4411</td>
<td><a href="mailto:boothe@wapa.gov">boothe@wapa.gov</a></td>
</tr>
<tr>
<td>UGP</td>
<td>Brad Bouchard</td>
<td>406-255-2864</td>
<td><a href="mailto:bouchard@wapa.gov">bouchard@wapa.gov</a></td>
</tr>
</tbody>
</table>
Addendum: Resources and Links

- NERC CIP Standards: http://www.nerc.com/pa/Stand/Pages/CIPStandards.aspx
- OMB Circular A-130: https://www.whitehouse.gov/sites/whitehouse.gov/files/omb/circulars/A130/a130revised.pdf
- WAPA Directives/Orders/Policies: https://my.wapa.int/programs/directives/Pages/directives.aspx
- WAPA Cyber Security Information: https://my.wapa.int/departments/it/Pages/Cyber-Security.aspx